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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/084,573      | 02/27/2002  | Khalil Amine         | 051583-0245         | 9196             |

23524 7590 08/05/2004

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EXAMINER

AUGHENBAUGH, WALTER

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1772

DATE MAILED: 08/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/084,573

Applicant(s)

AMINE ET AL.

Examiner

Walter B Aughenbaugh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20,22-31 and 35-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20,22-31 and 35-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Acknowledgement of Applicant's Amendments***

1. The amendments made in claims 20, 22, 35 and 36 in the Amendment filed May 19, 2004 (Amdt. C) have been received and considered by Examiner.
2. New claim 38 has been received and considered by Examiner.

### ***WITHDRAWN OBJECTIONS***

3. The objection to claim 35 made of record in paragraph 9 of the February 25, 2004 Office Action has been withdrawn due to Applicant's deletion of the absorbent material species in Amdt. C.

### ***WITHDRAWN REJECTIONS***

4. The 35 U.S.C. 112 rejection of claim 35 made of record in paragraph 10 of the February 25, 2004 Office Action has been withdrawn due to Applicant's deletion of the absorbent material species in Amdt. C.
5. The 35 U.S.C. 102 rejection of claim 22 that was repeated in paragraph 5 of the February 25, 2004 Office Action has been withdrawn due to Applicant's change of claim 22 from an independent claim to a dependent claim in Amdt. C.
6. The 35 U.S.C. 103 rejection of claims 20, 22-31 and 35 made of record in paragraph 11 of the February 25, 2004 Office Action has been withdrawn due to Applicant's amendments in claim 20 in Amdt. C.
7. The 35 U.S.C. 103 rejection of claims 36 and 37 made of record in paragraph 12 of the February 25, 2004 Office Action has been withdrawn due to Applicant's amendments in claim 36 in Amdt. C.

***REPEATED REJECTIONS***

8. The 35 U.S.C. 103 rejection of claims 1-5 and 7-17 that was repeated in paragraph 6 of the February 25, 2004 Office Action has been repeated for the reasons previously made of record.

9. The 35 U.S.C. 103 rejection of claim 6 that was repeated in paragraph 7 of the February 25, 2004 Office Action has been repeated for the reasons previously made of record.

10. The 35 U.S.C. 103 rejection of claims 18 and 19 that was repeated in paragraph 8 of the February 25, 2004 Office Action has been repeated for the reasons previously made of record.

***NEW REJECTIONS***

***Claim Rejections - 35 USC § 103***

11. Claims 20, 22-31 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaloner-Gill in view of Muller.

In regard to claims 20 and 23, Chaloner-Gill teaches a laminate for protecting components of an electrochemical cell such as a lithium battery (col. 1, lines 49-53), and therefore teaches a laminate for use as a battery housing. Chaloner-Gill teaches that the laminate protects from attack and/or passivation from electrolytes and moist air (col. 1, lines 17-19), and therefore the sealant layer of Chaloner-Gill (interior layers, items 36 and 38, col. 2, lines 9-12 and col. 4, lines 50-53) is capable of acting as a barrier to an electrolyte and has an internal surface that is substantially inert to the electrolyte. Chaloner-Gill teaches that the laminate comprises outer protective layer (item 40), adhesive layer (item 50), metal foil layer (item 44) and sealant layer (item 36) (col. 4, line 63-col. 5, line 43 and Figure 5). Chaloner-Gill teaches the combination of oxygen scavengers with various oxygen absorbers (col. 7, line 62-col. 8, line 68)

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and water absorbing agents such as silica gel (col. 9, lines 1-33). Chaloner-Gill teaches that the oxygen absorbers and water absorbing agents, in particle form, are incorporated in one of the sealant layer, adhesive layer or protective layer or are disposed of between layers of the laminate (col. 9, line 62-col. 10, line 15 and col. 10, lines 23-39 in claims 1 and 4-6; and col. 8, lines 49-68); therefore Chaloner-Gill teaches an absorbent material pattern printed on the internal surface of the sealant layer.

Chaloner-Gill fails to explicitly teach that the pattern of the absorbent material is a dot pattern. Muller, however, discloses absorbent particles distributed over a substrate layer in a dot pattern (col. 7, lines 10-15 and 52-60). Therefore, one of ordinary skill in the art would have recognized to have distributed the oxygen absorbers and water absorbing agents of Chaloner-Gill in a dot pattern on the internal surface of the sealant layer of Chaloner-Gill since a dot pattern is a notoriously well known pattern for absorbent material to be distributed over a substrate layer as taught by Muller.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have distributed the oxygen absorbers and water absorbing agents of Chaloner-Gill in a dot pattern on the internal surface of the sealant layer of Chaloner-Gill since a dot pattern is a notoriously well known pattern for absorbent material to be distributed over a substrate layer as taught by Muller.

In regard to claim 22, Chaloner-Gill teaches that the absorbent material is activated alumina, activated clay or clay (col. 7, line 61-col. 8, line 14 and col. 10, line 38). The activated alumina, activated clay or clay taught by Chaloner-Gill is necessarily hydrofluoric acid absorbent since Applicant claims activated alumina and clay as such.

In regard to claims 24 and 25, Chaloner-Gill teaches a barrier layer (polyamide-based layer, item 64) is disposed adjacent to the external surface of the sealant layer (interior layer, item 60) (col. 6, lines 15-22 and col. 6, line 46-col. 7, line 2 and Fig. 5). Chaloner-Gill teaches that the polyamide-based barrier layer contains an absorbent material (col. 9, line 62-col. 10, line 15 and col. 10, lines 23-39 in claims 1 and 4-6; and col. 8, lines 49-68).

Note that “adjacent” does not require absolute contact, but requires relatively close position. *Ex parte Hadsel*, (PO BdApp) 109 USPQ 509.

In regard to claims 26 and 27, Chaloner-Gill teaches that an adhesive layer (olefin based adhesive polymer layer, item 62, Fig. 5) is between the sealant layer (item 60) and the polyamide-based barrier layer (item 64) (col. 6, lines 15-22). Chaloner-Gill teaches that the absorbent material is incorporated in the adhesive material of the adhesive layer (item 62) (col. 9, line 62-col. 10, line 15 and col. 10, lines 23-39 in claims 1 and 4-6; and col. 8, lines 49-68).

In regard to claims 28-31, Chaloner-Gill teaches that a protective layer (polyamide based layer, item 72, Fig. 5) is disposed adjacent to the external surface of the barrier layer (polyamide-based layer, item 64) (col. 4, line 66-col. 5, line 3 and col. 6, lines 27-34). The protective layer of Chaloner-Gill contains an adhesive material since any material that comprises a layer that is bonded to another layer is an adhesive material; the polyamide based material of the protective layer (item 72) is therefore an adhesive material. Chaloner-Gill teaches that the laminate comprises an adhesive material (olefin based adhesive polymer layer, items 66 and 70) between the protective layer (item 72) and the barrier layer (item 64) (col. 6, lines 20-34). Chaloner-Gill teaches that the absorbent material is incorporated in the adhesive material of the adhesive layer

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(items 66 and 70) (col. 9, line 62-col. 10, line 15 and col. 10, lines 23-39 in claims 1 and 4-6; and col. 8, lines 49-68).

In regard to claim 35, Chaloner-Gill teaches that the absorbent material is a moisture absorbent and is calcium sulfate, silica gel or a water absorbent resin (col. 9, lines 1-12).

12. Claims 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaloner-Gill in view of McHenry et al.

Chaloner-Gill teach a laminate for protecting components of an electrochemical cell such as a lithium battery (col. 1, lines 49-53). Chaloner-Gill teach that the laminate protects from attack and/or passivation from electrolytes and moist air (col. 1, lines 17-19), and therefore the sealant layer is capable of acting as a barrier to an electrolyte and is substantially inert to the electrolyte. Note that it has been held that the recitation that an element is "capable of" performing a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138. Chaloner-Gill teach that the laminate comprises outer protective layer (item 40), adhesive layer (item 50), metal foil barrier layer (item 44) and sealant layer (item 36) (col. 4, line 63-col. 5, line 43 and Fig. 4). Chaloner-Gill teach that the metal foil barrier layer has a first surface disposed adjacent to the external surface of the sealant layer and an external surface (Fig. 4).

Chaloner-Gill fail to teach a second layer of metal foil attached to the first layer of metal foil by a polymeric adhesive layer. McHenry et al., however, disclose a metal(item 9)-plastic(item 7)-metal(item 9) laminate construction for packaging applications (col. 1, lines 5-7, col. 5, lines 6-10 and Fig. 3a and 3b) that is advantageous because the two metal layers minimize the passage of gas through the laminate (col. 7, lines 5-13). N.B. McHenry et al. discloses that

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when the metal layers are perforated, the passage of gas will be very small since the perforations are very small and that the passage of gas across the plastic “will be very long” since the perforations are staggered (col. 7, lines 13-20, this teaching is identical to Applicant’s reason for nonobviousness provided in the Declaration filed May 19, 2004). Therefore, one of ordinary skill in the art would have recognized to have added a second metal foil layer to the laminate of Chaloner-Gill and to have attached this second metal foil layer to the metal foil layer of Chaloner-Gill via an polymeric adhesive layer since the metal-plastic-metal laminate structure for packaging is a notoriously well known structure for minimization of the rate of gas permeation through packaging including the metal-plastic-metal laminate structure as taught by McHenry et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a second metal foil layer to the laminate of Chaloner-Gill and to have attached this second metal foil layer to the metal foil layer of Chaloner-Gill via an polymeric adhesive layer since the metal-plastic-metal laminate structure for packaging is a notoriously well known structure for minimization of the rate of gas permeation through packaging including the metal-plastic-metal laminate structure as taught by McHenry et al.

In regard to claim 37, Chaloner-Gill teach that the metal foil is aluminum foil (col. 5, line 5) and McHenry et al. teach that the metal layers are aluminum foils (col. 9, lines 33-35 and 54-56 and col. 10, lines 41-42).

In regard to claim 38, Chaloner-Gill teach the combination of oxygen scavengers with various oxygen absorbers such as activated clay and activated alumina (col. 7, line 62-col. 8, line 68) and water absorbing agents such as water absorbent resins, calcium sulfate and silica gel



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(col. 9, lines 1-33). Chaloner-Gill teach that the oxygen absorbers and water absorbing agents are incorporated in the adhesive layer along with the oxygen scavenger or are disposed of between layers of the laminate (col. 9, line 62-col. 10, line 15 and col. 10, lines 23-39 in claims 1 and 4-6; and col. 8, lines 49-68). Therefore, one of ordinary skill in the art would have recognized to have added the absorbent material of Chaloner-Gill to the polymeric adhesive layer of McHenry et al. (i.e. the plastic layer, item 7, of McHenry et al.) since it is notoriously well known to include absorbent material in adhesive layers in packaging laminates in order to absorb the target substance depending on the desired end use as taught by Chaloner-Gill.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the absorbent material of Chaloner-Gill to the polymeric adhesive layer of McHenry et al. (i.e. the plastic layer, item 7, of McHenry et al.) since it is notoriously well known to include absorbent material in adhesive layers in packaging laminates in order to absorb the target substance depending on the desired end use as taught by Chaloner-Gill.

#### ***ANSWERS TO APPLICANT'S ARGUMENTS***

13. Applicant's arguments on pages 9-13 of Amdt. C regarding the 35 U.S.C. 103 rejection of claims 1-5 and 7-17 have been fully considered but are not persuasive. Applicant's arguments on these pages depend on the condition where there are two "separate and distinct" metal foils, but this condition is not claimed. What is claimed is "a barrier layer comprising a first layer of metal foil and a second layer of metal foil adjacent to the first layer, the first and second layers of metal foil being separate and distinct". The first layer of metal foil and the second layer of metal foil are claimed as "separate and distinct". The two layers of Kurfman which have been identified as corresponding to the first and second layers of metal foil as claimed in the previous

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Office Actions are separate and distinct, and are “layer[s] of metal foil” because they are metal layers. The term “foil” in the recitation “layer of metal foil” does not contribute any further structure to the recitation over the recitation “layer of metal” (N.B. a straightforward recitation of “a laminate comprising (a) a sealant layer... and (b) two metal foils...” does require that there be two “separate and distinct” metal foils). A layer of metal is the same thing as a layer of metal foil. Applicant states on page 10 of Amdt. C that “the claims do not encompass a single metal sheet having two layers”, but this is exactly what is claimed in claim 1: the recitation “a barrier layer comprising a first layer of metal foil and a second layer of metal foil adjacent to the first layer, the first and second layers of metal foil being separate and distinct” precisely recites “a single metal sheet having two layers”. In the sentence bridging pages 9 and 10 of Amdt. C, Applicant states that “the terms ‘foil’ and ‘layer’ are not synonymous with each other”, but the language of the claim (“layer of metal foil”) requires that the terms are synonymous with each other. On page 12 of Amdt. C, Applicant argues that the Kurfman segregated alloy does not have space between the two compositionally distinct metal layers, but claim 1 does not require that there be space between the two metal layers.

14. Applicant’s arguments in Amdt. C regarding the 35 U.S.C. 103 rejection of claims 36 and 37 made of record in paragraph 12 of the previous Office Action are moot due to the withdrawal of this rejection in this Office Action.

15. Applicant’s arguments in Amdt. C regarding the 35 U.S.C. 103 rejection of claims 20, 22-31 and 35 made of record in paragraph 11 of the previous Office Action are moot due to the withdrawal of this rejection in this Office Action.

***RESPONSE TO DECLARATION UNDER 37 C.F.R. 1.132 FILED MAY 19, 2004***

16. The Declaration filed May 19, 2004 has been fully considered but is not persuasive. Paragraph 7 states of Applicant's invention: "Because two metal foils are separate prior to formation of the laminate, they will each include pinholes that do not align with each other". Paragraph 9 then describes a method taught by Kurfman for making the duplex metal alloy of Kurfman that includes the condition mentioned in paragraph 7 where the "two metal foils are separate prior to formation of the laminate". While paragraph 8 states that aligned pinholes will result from some of the methods taught by Kurfman that are discussed in paragraph 8, the problem of pinholes is not addressed in paragraph 9. Since pinholes are not mentioned in paragraph 9 and since the method discussed in paragraph 9 includes the condition mentioned in paragraph 7 where the "two metal foils are separate prior to formation of the laminate", pinholes in the two metal layers must not be aligned. One of ordinary skill in the art would recognize to use the method disclosed by Kurfman that would not result in aligned pinholes if aligned pinholes was a problem that needed to be avoided depending on the desired end result. The only argument made in paragraph 9 is that there is no space between the metal layers of Kurfman, which is irrelevant, because claim 1 does not require that there be a space between the metal layers. Paragraph 10 is only relevant for claims 36-38 as amended in the most recent amendment, and the basis of rejection involving Kurfman has been withdrawn in this Office Action.

***Conclusion***

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B. Aughenbaugh whose telephone number is 571-272-1488. The examiner can normally be reached on Monday-Thursday from 9:00am to 6:00pm and on alternate Fridays from 9:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Walter B. Aughenbaugh  
07/29/04

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SUPERVISORY PATENT EXAMINER  
1772

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